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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,843

08/26/2003

Wenjun Li

926512-101000

7028

7590 12/22/2006  
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EXAMINER

FREAY, CHARLES GRANT

ART UNIT

PAPER NUMBER

3746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/22/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/649,843

Applicant(s)

LI ET AL.

Examiner

Charles G. Freay

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 15, 16, 18 and 22 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 17 and 21 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

This office action is in response to the amendment of October 26, 2006. In making the below rejections the examiner has considered and addressed each of the applicant's arguments.

### ***Claim Objections***

Claim 19 is objected to because of the following informalities: in the last two lines "air passes" should be inserted after "the third solenoid valve is open" and "vent opening" should be "vent outlet". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague and indefinite because it is unclear what the applicant means by the term "cooperate" and it is also unclear what a "pressure sealed partition" is. Examiner assumes for purposes of examination the "cooperates" means "communicates". Claim 3 is vague and indefinite because it sets forth that the outlet opens into the pressurized interior "without the valve forming a pressure seal inhibiting

air flow. However, the applicant's valve seem to disclose valves which do form pressure seals (note the two outer valves in Fig. 15).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price in view of Robertson et al.

Price discloses an air pumping unit having a housing (outer structure of Fig. 11) and an electric motor (104) which drives plural diaphragm pumping elements at opposite ends thereof. The pump chambers deliver to an outlet chamber having plural solenoid valves (216, 218) therein. As understood, Price discloses that the valve assembly and the reciprocating member (132, 134, 136, 138) "cooperate without a pressure sealed partition therebetween". In Price the pump chamber and thus the reciprocating member are communicated to each other through walls having openings and also through a tube (208 Fig. 12). Price does not disclose that the housing interior is pressurized. Price does not disclose that the housing interior is pressurized.

Robertson et al disclose a similar pumping devise having a pressurized housing (12), an electromagnetic motor (60) which drives diaphragms (44) at opposite ends, valve heads having an inlet and an outlet valve are mounted at each end of the housing (see Fig. 4). The flow in Robertson goes thru the common lower inlet manifold (Fig. 4) and then

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passes thru the motor chamber upon discharge to flow to the cover and out the fitting (15). At the time of the invention it would have been obvious to one of ordinary skill to replace the pump arrangement of Price with the pump arrangement of Robertson et al in order to obtain a more durable pump with a cooled motor as taught by Robertson. Also such an arrangement results in a simpler pump since the linearly displaced motor does not require the cam plates as shown in Price.

Claims 5-14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price in view of Robertson et al as applied to claim 1 above, and further in view of Kimura et al as set forth in the office action of July 26, 2006.

The examiner notes that the applicant has not challenged the examiner's official notice that retention tabs and the use of filters are well known. This is taken as an admission that retention tabs and filters are well known prior art.

### ***Response to Arguments***

Applicant's arguments filed October 27, 2006 have been fully considered but they are not persuasive. First, the applicant argues that Robertson does not disclose a pressurized housing. Second, the applicant argues that if one were to utilize the pump arrangement of Robertson in connection with the solenoid valves of Price one would integrate the valves of Price into the housing 14 of Robertson. Third, with regards to claims 2 and 3 the applicant notes that the casing of Robertson is sealed at valves 46 and thus the casing would form a pressure sealed partition.

The examiner disagrees with each of the applicant's arguments. With regards to the first argument, Robertson discloses that the motor chamber (30) is pressurized. See for example the last sentence of the Abstract. As noted by the applicant the motor chamber 30 and the two pump assemblies are what form the pump 12. The motor chamber, which is defined by housing portion 50 is pressurized. This Robertson et al clearly disclose a pressurized housing.

In response to applicant's second argument that if one were to utilize the pump arrangement of Robertson in connection with the solenoid valves of Price one would integrate the valves of Price as part of housing 14 of Robertson, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Additionally, the examiner notes that the applicant's argument is made as if the combination were Robertson et al in view of Price. However, in the rejection as set forth Price is the base reference not the modifying reference.

With regards to the applicant's third argument the examiner notes that rejection set forth above under 35 USC 112, second paragraph. The examiner also notes that in the applicants own disclosure, and following the line of reasoning used in the argument, Fig. 15 discloses a pressure sealed partition sealed by valves 112. Thus the newly

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amended claim language and the applicant's arguments do not overcome the rejections set forth above.

***Allowable Subject Matter***

Claims 4, 15, 16, 18, 19 and 22 are allowed.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

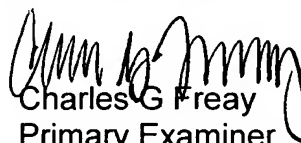
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-

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4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Charles G. Freay  
Primary Examiner  
Art Unit 3746

CGF  
December 8, 2006